ALLIANCE
Technologies Corporation

Ciba Geigy
received
25 June 91 MH
TRC/T6
9104018-0A
Rec'd 6-27-91
F.B.

June 18, 1991

Mr. Dennis Gagne
Regional Sample Control Custodian
U.S. Environmental Protection Agency
90 Canal Street
Boston, MA 02114

Re: 68-W9-0003
Work Assignment R01005
Case 16259, SDG AZ328
Gulf South Environmental Laboratory
Ciba-Geigy
Volatiles: 7/Water; AZ328-AZ334
Semivolatiles: 6/Water; AZ328-AZ333
Pesticide/PCBs: 6/Water; AZ328-AZ333

Dear Mr. Gagne:

The following is a Data Validation Report for Case 16259, which was generated by QuantaLex, Alliance's Data Validation Sub-Contractor. The analytical data for this case contained water samples which were collected by Alliance at the Ciba-Geigy Site and analyzed by Gulf South Environmental Laboratories.

If you have any questions, please feel free to contact me at (508) 970-5600 X 4201.

Sincerely,

Cynthia S. Fortin

Cynthia S. Fortin
Data Validation Coordinator

encl.

CSF/er

CC: Deborah Szaro/Moira Lataille, Region I TPO
Joanna Hall - Alliance Project Manager

QUANTALEX
INCORPORATED

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June 17, 1991

Ms. Joanna Hall
Alliance Technologies Corp.
Boott Mills South, Foot of John Street
Lowell, MA 01852

RE: Case 16259, SDG AZ328
Gulf South Environmental Laboratory
Volatiles: 7/Water; AZ328-AZ334
Semivolatiles: 6/Water; AZ328-AZ333
Pesticide/PCBs: 6/Water; AZ328-AZ333

Dear Ms. Hall:

Validation was performed on the analytical data from water samples which were collected by TRC Companies and submitted to Gulf South Environmental Laboratory for volatile, semivolatile, and pesticide analyses. The data were evaluated based on the following parameters:

- Data completeness
- * Holding times
- * GC/MS tuning
- Calibration
- Blanks
- Surrogate recoveries
- Matrix spike/matrix spike duplicate
- * Field duplicates
- * Internal standard performance
- Compound identification
- * Compound quantitation

* All criteria were met for this parameter

Table 1 summarizes the validation recommendations which were based on the following information:

o16259/ALL21

Data Completeness

Volatiles:

The Form 1 for sample AX328 did not report the positive result for Tetrachloroethene, although mass spectra were included as well as a value reported on the quantitation report. The result of 97 ug/L is reported on the data tables.

Pesticides:

The concentrations for the Evaluation Standard Mixes are missing from this case. On a previous case, the laboratory had submitted these concentrations. These standard concentrations were used to verify the reported calibration factors for this case and were found to be correct. The form containing the concentrations is inserted in this case as page 60A.

Calibrations

Volatiles:

The following compounds exceeded the percent difference (%D) or relative response criteria in the 4/29/91 continuing calibration. The non-detected results for 2-Butanone are rejected (R) and the positive results for Acetone and Tetrachloroethene are estimated (J) in the associated samples.

Compound	CC 04/29/91	CC 04/29/91	CC 04/29/91
2-Butanone	+		
Acetone		X	
Tetrachloroethene			X
Associated samples:	AZ328	AZ333	AZ328
	AZ329	AZ334	AZ329
	AZ330		AZ330
	AZ332		
	AZ333		
	AZ334		

X = %D > 25% but < 50%
+ = RF < 0.05

Semivolatiles:

The following compounds exceeded the percent difference (%D) criteria in the 4/28/91 continuing calibration. The non-detected results for these compounds in all samples are estimated (UJ).

Compound	CC 04/28/91
4-Chloroaniline	X
3-Nitroaniline	X
4-Nitroaniline	X

Associated samples: AZ328, AZ329
AZ330, AZ331
AZ332, AZ333

X = %D > 50%

Pesticides:

The percent difference (%D) for Aldrin exceeded criteria in the 4/29/91 continuing calibration on column DB608. The positive results for Aldrin in samples AZ330 and AZ331 are estimated (J).

Compound	CC 04/29/91
Aldrin	X

Associated samples: AZ330, AZ331

X = %D > 15%

Blanks

Volatiles:

The blanks were contaminated with Acetone. The results for Acetone in samples AZ328, AZ329, AZ330, AZ331, and AZ332 are adjusted according to the following:

Compound	Maximum Concentration	Action Level
Acetone	30 ug/L	300 ug/L

Action:

Value < CRQL: report CRQL followed by a U
Value > CRQL but < action level: report value followed by a U
Value > CRQL and > action level: report value unqualified

The additional blank contaminants 1,2-Dichloroethane and Methylene Chloride were not detected in the samples and no action is necessary.

Semivolatiles:

The blank was contaminated with bis(2-Ethylhexyl)phthalate. The result for bis(2-Ethylhexyl)phthalate in sample AZ328 is adjusted according to the following:

Compound	Maximum Concentration	Action Level
bis(2-Ethylhexyl)phthalate	2 ug/L	20 ug/L

Action:

Value < CRQL: report CRQL followed by a U
Value > CRQL but < action level: report value followed by a U
Value > CRQL and > action level: report value unqualified

Surrogates

	Percent Recoveries	
	Base/Neutral	Pest
TR #	NBZ	DBC
AZ328	132%	999%
AZ328DL	132%	0%
AZ329	125%	
AZ329DL	136%	
AZ331	121%	
AZ332	119%	166%

Semivolatiles:

The percent recovery of the surrogate Nitrobenzene-d5 exceeded the QC limits in samples AZ328, AZ329 (and their dilutions), AZ331, and AZ332; however, no action is necessary because only one surrogate in the base/neutral fraction was outside QC limits.

Pesticides:

The percent recovery of the surrogate Dibutylchlorendate exceeded the QC limits in sample AZ332; however, no action is necessary because there were no positive results in this sample.

The percent recovery of the surrogate Dibutylchlorendate was 0% in sample AZ328DL. The surrogate appears to have been diluted out of the sample; therefore, no action is taken.

The percent recovery of the surrogate Dibutylchlorendate was 999% in sample AZ328. However, this appeared to be a matrix effect and the results from this sample were not reported due to matrix interference; therefore no action is necessary. (Diluted analysis was reported.)

Matrix Spike/Matrix Spike Duplicate

Semivolatiles:

The spiking compounds failing percent recovery criteria in the MS/MSD analyses were undetected in the associated unspiked sample AZ332. No action is necessary.

Pesticides:

Various spiking compounds failing percent recovery and RPD criteria in the MS/MSD analyses were undetected in the associated unspiked sample AZ332. No action is necessary.

Other QC

Volatiles:

All diluted analyses of samples AZ328, AZ329, and AZ330 were prepared from sample aliquots of less than 1 milliliter.

Compound ID

Pesticides:

The positive results for Aldrin, 4,4'-DDD, and Methoxychlor in sample AZ331 are estimated (J) due to lack of quantitative agreement between the quantitation column and confirmation column.

Sample AZ331 was analyzed as a dilution due to high interferences in the original sample. All results on the Data Table are from the original analysis with the exception of the non-detected results for Endosulfan I, Dieldrin, 4,4'-DDE, alpha-Chlordane, and gamma Chlordane. The Contract Required Quantitation Limits for these compounds are from the dilution.

Instrument Performance

Pesticides:

The percent breakdowns for Endrin and 4,4'-DDT were reported as total degradation on column DB1701. However, it was not indicated that Endrin Aldehyde and 4,4'-DDD coelute on this column. Separate calculations showed that the percent breakdown for Endrin and 4,4'-DDT were within criteria. Therefore, no action is taken.

For the run performed on 4/26/91 through 4/29/91 on column DB608, several percent differences for the Dibutylchlorendate retention time check appeared to be reported incorrectly. The percent differences were recalculated and were within criteria. Therefore, no action is necessay.

General Comments

Positive results reported below the Contract Required Quantitation Limits (CRQLs) are qualified as estimated (J).

Tentatively Identified Compounds (TICs) which were common laboratory artifacts/ contaminants (aldol products, solvent preservatives, reagent contaminants, column breakdown products, etc.) or which were also found in any associated blank were not listed on Table II - Tentatively Identified Compound Summary. If it was determined

that the tentative identification of a TIC was not acceptable, the identification was changed to an unknown or appropriate class of compound.

Dimethylbenzene (xylene), a VOA target compound, was reported as a TIC in the semivolatile analyses of samples AZ328 and AZ329. This compound is not reported on Table II.

Sincerely,
QuantaLex, Inc.

Jill Gaschler
Associate Consultant

Anthony Toth
Staff Consultant

Enclosure

CIBA GEIGY
CASE 16259
TABLE I - RECOMMENDATIONS SUMMARY

TR #	VOA	BNA	Pesticide/PCB
AZ328	A1,A2,A4	A7,A8	A
AZ329	A1,A2,A4	A7	A
AZ330	A1,A2,A4	A7	A5
AZ331	A1	A7	A5,A6
AZ332	A1,A2	A7	A
AZ333	A2,A3	A7	A
AZ334	A2,A3	---	---

A - Accept all data.

A1 - Accept data but change positive values for Acetone to revised detection limits due to blank contamination.

A2 - Accept data but reject (R) detection limits for 2-Butanone due to minimum RF being less than 0.05.

A3 - Accept data but estimate (J) positive values for Acetone due to calibrations being out of range.

A4 - Accept data but estimate (J) positive values for Tetrachloroethene due to calibrations being out of range.

A5 - Accept data but estimate (J) positive values for Aldrin due to calibrations being out of range.

A6 - Accept data but estimate (J) positive values for Aldrin, 4,4'-DDD, and Methoxychlor due to lack of quantitative agreement between columns.

A7 - Accept data but estimate (UJ) detection limits for 4-Chloroaniline, 3-Nitroaniline, and 4-Nitroaniline due to calibrations being out of range.

A8 - Accept data but change positive values for bis(2-Ethylhexyl)phthalate to revised detection limits due to blank contamination.

CIBA GEIGY
CASE 16259
TABLE II - TENTATIVELY IDENTIFIED COMPOUND SUMMARY

Semivolatile Compounds	Volatile Compound
AZ328 (20 TICs)	AZ334 (1 TIC)
Chloromethyl Benzene Isomer	1-Bromo-2-Chloro Ethane
N-(1,1-Dimethylethyl)-2-Propenamide	
Alpha,Alpha-Dimethyl Benzene Methanol	AZ328 (1 TIC)
Chlorophenol Isomer	Chlorotoluene Isomer
1,1'-Oxybisbenzene	
4-Hydroxy-3-Methoxy-Benzoic Acid	AZ329 (1 TIC)
Sulfonybisphenol Isomer (2)	Chlorotoluene Isomer
Benzenacetic Acid	
Unknown Carboycilic Acid	AZ330 (1 TIC)
Unknown PNA(MW=154)	1-Chloro-4-Trifluorobenzene
Unknown Fatty Acid	
Unknown Chlorinated Organic	AZ331 (1 TIC)
Unknown (7)	Chlorotoluene Isomer
AZ329 (20 TICs)	
Chloromethyl Benzene Isomer	
1-Phenyl Ethanone	
Alpha,Alpha-Dimethyl Benzene Methanol	
Ethyl-phenol	
Chlorophenol Isomer	
2-Chloro Benzene Methanol	
Benzenacetic Acid	
1,1'-Oxybis Benzene	
Sulfanylbis Phenol Isomer (3)	
Unknown Fatty Acid (2)	
Unknown Carboxylic Acid	
Unknown Chlorinated Organic	
Unknown (5)	
AZ330 (8 TICs)	
Trifluoromethyl Benzenamine Isomer	
Chloro Trifluoromethyl Benzenamine Isomer (2)	
2,6-Bis(1,1-Dimethylethyl)-2,5-Cyclohexadiene-1,4-Dione	
Dimethyl Pyrazine	
2-(2H-Benzotriazol-2-yl)-4-Methyl Phenol	
Unknown (2)	

CIBA GEIGY
CASE 16259
TABLE II - TENTATIVELY IDENTIFIED COMPOUND SUMMARY
(continued)

Semivolatile Compounds	Volatile Compound
AZ331 (21 TICs)	
Aniline (ACN)	
Tetramethyl 4-Piperdinone	
Tetramethyl 4-Piperdinol	
Benzeneacetic Acid	
Chloro Trifluoromethyl Benzenamine Isomer	
Methyl Quinoxaline	
2,6-Bis(1-Dimethyethyl)-2,5-Cydohexadiene-1,4-Dione	
1H-Benzotriazole	
6-Chloro-N,N'-Bis(1-methylethyl)-1,3,5-Triazine-2,4-Diamine	
2-(2H-Benzotriazol-2-YL)-4-Methyl Phenol	
Unknown (10)	
Unknown Chlorinated Organic	
AZ332 (1 TIC)	
Unknown	

Region I

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 16259 **SITE** Ciba Geigy
LABORATORY Gulf South Environmental Laboratory **NO. OF SAMPLES/**
MATRIX 7/Water
SDG # AZ328 **REVIEWER (IF NOT ESD)** QuantaLex, Inc.
SOW # 10/86 (Rev. 2/88) **REVIEWER'S NAME** Anthony Toth
DPO: ACTION _____ **FYI** _____ **COMPLETION DATE** June 17, 1991

Data Assessment Summary

		VOA	BNA	Pest.	Other
1.	**Holding Times**	O	O	O	
2.	**GC/MS Tune/Instr.Perf.**	O	O	O	
3.	**Calibrations**	M	O	O	
4.	**Blanks**	O	O	O	
5.	**Surrogates**	O	O	O	
6.	**Matrix Spike/Dup.**	O	O	O	
7.	**Other QC**	O	O	O	
8.	**Internal Standards**	O	O	N/A	
9.	**Compound Identification**	O	O	O	
10.	**System Performance**	O	O	O	
11.	**Overall Assessment**	O	O	O	

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
N/A = Not applicable.

ACTION ITEMS: Please refer to the memo and discussions pertaining to each data assessment category.

AREAS OF CONCERN: Most results for 2-Butanone are rejected.

NOTABLE PERFORMANCE:

This work was conducted on behalf of Alliance Technologies Corp. under subcontract #1-635-058 (R01005).

REGION I
Data Review Worksheets

Site Name Ciba Geigy
Reference Number

REGION I REVIEW OF ORGANIC CONTRACT LABORATORY DATA PACKAGE

The hardcopied Gulf South Environmental Laboratory data package received at Region I has been reviewed and the quality assurance and performance data summarized. The data reviewed included:

Case No.	16529	SAS No.		Sampling Date(s):	04/18/91
SDG No.	AZ328	Matrix	Water	Shipping Date(s):	04/19/91
No. of Samples	7			Date Rec'd by Lab:	04/22/91

Traffic Report Nos.: AZ328, AZ329, AZ330, AZ331, AZ332, AZ333, AZ334

Trip Blank No.: AZ334
Equipment Blank No.: AZ333 Rinsate
Field Dup. Nos.: AZ328, AZ329

SOW No. 10/88 (Rev. 2/88) requires that specific analytical work be done and that associated reports be provided by the laboratory to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- Data Completeness
- Holding Times
- GC/MS Tuning
- Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Dup
- Field Duplicates
- Internal Standard Performance
- Pesticide Inst. Performance
- Compound Identification
- Compound Quantitation

Overall comments: In general, the data are valid. Most results for 2-Butanone are rejected.

Definitions of Qualifiers:

A - Acceptable data.
J - Approximate data due to quality control criteria.
R - Reject data due to quality control criteria.
U - Compound not detected.

Reviewer: Anthony W. Roth Date: 6-17-91

I. DATA COMPLETENESS

MISSING INFORMATION	DATE LAB CONTACTED	DATE RECEIVED
Pesticide:		
Evaluation Mixes standard concentrations.	Not Requested (See memo)	
VOA:		
The positive result for Tetrachloroethane (97 ppb) was not reported on Form 1 for sample AZ328.	Not Requested (See memo)	

II. HOLDING TIMES

Complete table for all samples and circle the fractions which are not within criteria.

SAMPLE ID	DATE SAMPLED	VOA DATE ANAL	BNA DATE EXTR	BNA DATE ANAL	PEST DATE EXTR	PEST DATE ANAL
AZ328	04/18/91	04/29/91	04/22/91	04/28/91	---	---
AZ328DL	04/18/91	04/30/91	04/22/91	04/29/91	04/22/91	05/01/91
AZ329	04/18/91	04/29/91	04/22/91	04/28/91	---	---
AZ329DL	04/18/91	04/30/91	04/22/91	04/29/91	04/22/91	05/02/91
AZ330	04/18/91	04/29/91	04/22/91	04/28/91	04/22/91	04/28/91
AZ330DL	04/18/91	04/30/91	---	---	---	---
AZ331	04/18/91	04/30/91	04/22/91	04/28/91	04/22/91	04/28/91
AZ331DL	04/18/91	---	---	---	04/22/91	05/02/91
AZ332	04/18/91	04/29/91	04/22/91	04/28/91	04/22/91	04/29/91
AZ333	04/18/91	04/29/91	04/22/91	04/28/91	04/22/91	04/30/91
AZ334	04/18/91	04/29/91	---	---	---	---

VOA - Unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
Preserved: Both within 14 days of sample collection.
Soils: Both within 14 days of sample collection.

BNA & PEST - Extracted within 7 days, analyzed within 40 days, soils and water.

ACTION:

1. If holding times are exceeded all positive results are estimated (J) and non-detects are estimated (UJ).
2. If holding times are grossly exceeded, the reviewer may determine that non-detects are unusable (R).

III. GC/MS TUNING

_X_ The DFTPP performance results were reviewed and found to be within the specified criteria.

If no,
Samples affected:_____

_X_ The BFB performance results were reviewed and found to be within the specified criteria.

If no,
Samples affected:_____

If mass calibration is in error, refer to the Region guidelines for expanded criteria. If necessary, all associated data as unusable (R).

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 04/18/91
Dates of Continuing Calibrations : 04/29-30/91
Instrument ID : F
Matrix/Level : Water

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
04/29/91	RF	2-Butanone (0.042)
	Samples Affected:	AZ328, AZ329, AZ330, AZ332, AZ333, AZ334
04/29/91	%D	Acetone (34.0)
	Samples Affected:	AZ333, AZ334
04/29/91	%D	Dibromochloromethane (26.4)
	Samples Affected:	None
04/29/91	%D	2-Butanone (39.1)
	Samples Affected:	None
04/29/91	%D	Trans-1,3-Dichloropropene (26.4)
	Samples Affected:	None
04/29/91	%D	Bromoform (27.2)
	Samples Affected:	None
04/29/91	%D	4-Methyl-2-Pentanone (29.8)
	Samples Affected:	None
04/29/91	%D	2-Hexanone (34.2)
	Samples Affected:	None
04/29/91	%D	Tetrachloroethene (27.2)
	Samples Affected:	AZ328, AZ329, AZ330
04/29/91	%D	1,2-Dichloroethane (25.3)
	Samples Affected:	None

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 04/18/91
Dates of Continuing Calibrations : 04/29-30/91
Instrument ID : F
Matrix/Level : Water

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND (VALUE)
04/29/91	%D	Carbon Tetrachloride (25.7)
	Samples Affected:	None
04/29/91	%D	Vinyl Acetate (25.5)
	Samples Affected:	None
04/29/91	%D	cis-1,3-Dichloropropene (25.1)
	Samples Affected:	None
04/30/91	%D	Acetone (45.1)
	Samples Affected:	None
04/30/91	%D	2-Butanone (26.1)
	Samples Affected:	None
04/30/91	%D	Bromodichloromethane (27.9)
	Samples Affected:	None
04/30/91	%D	Dibromochloromethane (39.9)
	Samples Affected:	None
04/30/91	%D	Bromoform (48.4)
	Samples Affected:	None
04/30/91	%D	2-Hexanone (35.2)
	Samples Affected:	None
	Samples Affected:	

1. All RF's, and RF's must be >0.05.
2. All %RSD's must be <30%.
3. All %D's must be <25%.

ACTION:

1. If any compound has an initial RF or a continuing RF of <0.05:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as unusable (R).

2. If any compound has a %RSD >30% or a %D >25%:
   a. Flag positive results for that compound as estimated (J).
   b. Flag non-detects for that compound as estimated (UJ) if the %RSD or %D is >50%.

A separate worksheet should be filled out for each initial curve.

IV B. SEMIVOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration : 02/26/91
Dates of Continuing Calibrations : 04/28-29/91
Instrument ID : B

DATE	CRITERIA OUT RF, %RSD, RF, %D	COMPOUND
04/28/91	%D	4-Chloroaniline (-69.5)
	Samples Affected:	AZ328, AZ329, AZ330, AZ331, AZ332, AZ333
04/28/91	%D	3-Nitroaniline (108.9)
	Samples Affected:	AZ328, AZ329, AZ330, AZ331, AZ332, AZ333
04/28/91	%D	4-Nitrophenol (-25.3)
	Samples Affected:	None
04/28/91	%D	4-Nitroaniline (-60.3)
	Samples Affected:	AZ328, AZ329, AZ330, AZ331, AZ332, AZ333
04/29/91	%D	4-Chloraniline (-76.7)
	Samples Affected:	None
04/29/91	%D	3-Nitroaniline (104.4)
	Samples Affected:	None
04/29/91	%D	4-Nitrophenol (-39.1)
	Samples Affected:	None
04/29/91	%D	4-Nitroaniline (-72.1)
	Samples Affected:	None
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	
	Samples Affected:	

See worksheet IV-A for criteria and actions.

A new worksheet should be filled out for each initial curve.

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

List the contamination in the blanks below.

1. Laboratory Blanks

Level: Soil

DATE	LAB ID	FRACTION/ MATRIX	COMPOUND	CONCENTRATION/ UNITS
04/29/91	VBLKW1	VOA/Water	Methylene Chloride	5 ug/L
04/29/91	SBLKW1	BNA/Water	bis(2-Ethylhexyl)phthalate	2 ug/L

2. Equipment and Trip Blanks

DATE	TR #	FRACTION/ MATRIX	COMPOUND	CONCENTRATION/ UNITS
04/29/91	AZ333	VOA/Water	Acetone	25 ug/L
04/29/91	AZ334	VOA/Water	Acetone	30 ug/L
04/29/91	AZ334	VOA/Water	1,2-Dichloroethane	13 ug/L

A separate worksheet should be used for low and medium level blanks.

V B. BLANK ANALYSIS RESULTS (Section 3)

3. Blank Actions

Action levels should be based upon the highest concentration of contaminant determined in any blank. The action level for samples which have been concentrated or diluted should be multiplied by the concentration/dilution factor. No positive sample result should be reported unless the concentration of the compound in the sample exceeds the action level of 10 x's the amount in the blank for the common contaminants, or 5 x's the amount for any other compound. Specific actions are as follows:

1. The concentration is less than the CRQL, report the CRQL.

2. The concentration is greater than the CRQL, but less than the action level, report the concentration found U.

3. The concentration is greater than the action level, report the concentration unqualified.

For examples, refer to the Regional Guidelines.

Common contaminants = methylene chloride, acetone, 2-butanone, toluene, and phthalates.

LEVEL: Low

COMPOUND	MAX. CONC./ UNITS	ACTION LEVEL/ UNITS	CRQL
Acetone	30 ug/L	300 ug/L	10 ug/L
Methylene Chloride	5 ug/L	50 ug/L	5 ug/L
1,2-Dichloroethane	13 ug/L	65 ug/L	5 ug/L
bis(2-Ethylhexyl)phthalate	2 ug/L	20 ug/L	10 ug/L

A separate worksheet should be used for low and medium level blanks.

VI. SURROGATE SPIKE RECOVERIES

List the percent recoveries which do not meet the criteria for surrogate recovery.

Matrix: Water

	VOA			B/N			A		Pest*
TR #'s	TOL	BFB	DCE	NBZ	FBP	TPH	PHL	2FP	TBP	DBC
AZ328				132%						999%
AZ328DL				132%						0%
AZ329				125%						
AX329DL				136%						
AX331				121%						
AZ332				119%						166%
QC Limits				35%						24%
	to	to	to	to	to	to	to	to	to	to
				114%						154%

Surrogate Actions: * Advisory only

	Percent Recovery		
	<10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	UJ	A

CRR = Contract Required Recovery Range

Surrogate Action should be applied:

1. If at least two surrogates in a B/N or A fraction or one surrogate in the VOA fraction are out of specification, but have recoveries of >10%.
2. If any one surrogate in a fraction shows <10% recovery.

VII A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1. Matrix Spike/Matrix Spike Duplicate Recoveries and Precision

TR Nos. AZ332MS , AX332MSD Level: Low Matrix: Water

List the percent recoveries and RPD's of compounds which do not meet the criteria stated on Form 3.

FRACTION/ MS OR MSD	COMPOUND	%REC/ RPD	QC LIMITS
Pest/MS	Endrin	123%	56-121%
Pest/MS/MSD	Heptachlor	27	20
Pest/MS/MSD	Aldrin	30	22
BNA/MS	4-Nitrophenol	113%	10-80%
BNA/MSD	4-Nitrophenol	109%	10-80%
BNA/MS	2,4-Dinitrotoluene	109%	24-96%
BNA/MSD	2,4-Dinitrotoluene	103%	24-96%

QUALIFICATION IS LIMITED TO THE UNSPIKED SAMPLE ONLY.

1. If any compound does not meet the Contract Required Recovery range (CRR), follow the actions stated below:

	Percent Recovery		
	≤10%	10%-CRR	>CRR
Positive sample results	J	J	J
Non-detected results	R	A	A

2. If any compound does not meet the RPD criteria, flag positive results for that compound as estimated (J).

A separate worksheet should be used for each MS/MSD pair.

VII B. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (Section 2)

2. Matrix Spike Duplicate - Unspiked Compounds

TR Nos. AZ332MS , AZ332MSD

List the concentrations of the unspiked compounds and determine the percent RSD's of the unspiked sample, matrix spike, and matrix spike duplicate. No limits have been developed for the RSD values of the unspiked compounds.

FRACTION	COMPOUND	SAMPLE, MS, MSD CONC.	%RSD
None			

The reviewer must use professional judgement to determine if there is a need to qualify any of the unspiked compounds in the sample.

VIII. FIELD DUPLICATE PRECISION

TR Nos. AZ328 , AZ329 Matrix: Water

List the concentrations of the compounds which do not meet the following RPD criteria:

1. An RPD of <30% for water duplicates.
2. An RPD of <50% for soil duplicates.

FRACTION	COMPOUND	SAMPLE CONC.	DUP SAMPLE CONC.	RPD
None				

ACTIONS:

1. If the results for any compounds do not meet the RPD criteria, flag the positive results for that compound as estimated.

2. If one value is non-detected, and one is above the CRQL:
   a. Flag the positive result as estimated (J).
   b. Flag the non-detected result as estimated (UJ).

NOTE: Professional judgement may be utilized to apply duplicate actions to all samples of a similar matrix.

A separate worksheet should be filled out for each field duplicate pair.

IX. INTERNAL STANDARD PERFORMANCE

List the internal standard areas of samples which do not meet the criteria of +100% or -50% of the internal standard area in the associated continuing calibration standard.

SAMPLE ID	DATE	IS OUT	IS AREA/ RT	ACCEPTABLE RANGE	ACTION
None					

ACTION:

1. If an IS area count is outside the criteria -50% or +100% of the associated standard:
   a. Positive results for compounds quantitated using that IS are flagged as estimated (J) for that sample fraction.
   b. Non-detects for compounds quantitated using that IS are flagged as estimated (UJ) for that sample fraction.
   c. If extremely low area counts are reported, or if performance exhibits a major drop-off, then a severe loss of sensitivity is indicated. Non-detects should then be flagged as unusable (R).

2. If an IS retention time varies more than 30 seconds, the chromatographic profile for that sample must be examined to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction.

X A. PESTICIDE INSTRUMENT PERFORMANCE (Section 1)

1. DDT Retention Time

List the DDT standards which have a retention time (RT) of less than 12 minutes on the packed column (except OV-1 or OV-101).

STANDARD ID	DATE/ TIME	RT	SAMPLES AFFECTED	ACTIONS
None				

ACTION:

If the RT is less than 12 minutes, examine the chromatography to evaluate the separation. If adequate separation is not achieved, flag all affected compound data as unusable (R).

X B. PESTICIDE INSTRUMENT PERFORMANCE (Section 2)

2. Retention Time Windows

List the compounds which are not within the established windows.

COMPOUND	DATE (TIME)	RT	RT WINDOW	SAMPLES AFFECTED
None				

Check the sample chromatograms of the samples analyzed after the last in control standard for peaks within an expanded window. If no peaks are present, there is usually no effect on the data. Refer to Regional guidelines for information on qualifying data if peaks are present. If peaks are present, discuss actions below:

X C. PESTICIDE INSTRUMENT PERFORMANCE (Section 3)

3. DDT and Endrin Degradation

List the standards which have a DDT or Endrin breakdown of greater than 20%.

STANDARD ID	DDT OR ENDRIN	PERCENT BREAKDOWN	SAMPLES AFFECTED	DDD, DDE OR ENDRIN KETONE PRESENT
None				

If the percent breakdown for DDT is greater than 20%:

1. Flag all positive results for DDT as estimated (J) for all samples following the last in control standard. If no DDT was present, but DDD and/or DDE are positive, then flag the quantitation limit for DDT as unusable (R).

2. Flag all positive results for DDD and/or DDE as estimated (J).

If the percent breakdown for Endrin is greater than 20%:

1. Flag all positive results for endrin as estimated (J) for all samples following the last in control standard. If no endrin was detected, but endrin aldehyde and/or endrin ketone are positive, flag the quantitation limit for endrin as unusable (R).

2. Flag all positive results for endrin ketone as estimated (J).

The percent breakdowns for Endrin and 4,4'-DDT were reported as total degradation on column DB-1701. However, it was not indicated that Endrin Aldehyde and 4,4'-DDD coelute on this column. Separate calculations showed that the percent breakdown for Endrin and 4,4'-DDT are within criteria. Therefore, no action is taken.

X D. PESTICIDE INSTRUMENT PERFORMANCE (Section 4)

4. DBC Retention Time Check

List the percent difference for the DBC shift greater than 2% for packed columns, greater than 1.5% for wide-bore capillary columns, or greater than 0.3% for narrow-bore capillary columns.

TR #'S	DBC %DIFFERENCE	ACTIONS
None		

If the DBC does not meet the retention time criteria, the analysis may be flagged as unusable (R) for the affected samples, but qualification of the data is left up to the professional judgement of the reviewer. Discuss any qualification of the data below:

DB608 4/26-29/91 run %Ds appear to be incorrect. Recalculated results as well as the laboratory results are within criteria. No action is necessary.

XI A. PESTICIDE CALIBRATION (Sections 1 and 2)

1. Initial Calibration

List the compounds which did not meet the Relative Standard Deviation (RSD) criteria of less than 10% for the initial calibration on the quantitation column.

DATE	COMPOUND	%RSD	COLUMN	SAMPLES AFFECTED
None				

Flag all associated positive results as estimated (J) for samples which did not meet the %RSD criteria.

2. Analytical Sequence

Did the laboratory follow the correct 72 hour sequence described in the SOW? Yes

If No,

The data may be affected. The data reviewer must use professional judgement to determine the severity of the effect and qualify the data accordingly. Discuss any actions below:

XI B. PESTICIDE CALIBRATION (Section 3)

3. Continuing Calibration

List the compounds which did not meet the percent difference (%D) criteria of <15% on the quantitation column or <20% on the confirmation for the continuing calibration.

DATE	COMPOUND	%D	COLUMN	SAMPLES AFFECTED
04/29/91	Aldrin	-17.3	DB608	AZ330, AZ331

If the %D criteria is not met, flag all associated positive results as estimated (J).

XII. SAMPLE QUANTITATION

In the space below, please show a minimum of one sample calculation per fraction:

VOA:

AZ328DL Toluene

$$\frac{138854}{114190} \times \frac{50\ ug/L}{0.536} \times 2000\ \text{dil. factor} = 226864\ ug/L$$

BNA:

AZ328 1,2-Dichlorobenzene

$$\frac{37320}{11069} \times \frac{40\ ug/L}{1.291} = 104.5\ ug/L$$

PEST/PCB:

AZ330 Aldrin

$$\frac{150935}{229446} \times \frac{0.0107\ ng\ std}{1\ ul\ injected} \times \frac{10{,}000\ ul}{1{,}000\ ml} = 0.0704\ ug/L$$

CLP VOLATILE ORGANIC ANALYSIS
CASE NO. 16259 SDG NO. AZ328
ANALYTICAL RESULTS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328	AZ329	AZ330	AZ331	AZ332	AZ333	AZ334	
Remarks	50X Dil.	Dup. AZ328 50X Dil.				Rinsate	Trip Blank	
Sampling Date	04/18/91	04/18/91	04/18/91	04/18/91	04/18/91	04/18/91	04/18/91	
Analysis Date	04/29/91	04/29/91	04/29/91	04/30/91	04/29/91	04/29/91	04/29/91	
VOLATILE ORGANIC COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride								
Acetone						25 J	30 J	
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
1,2-Dichloroethene (Total)								
Chloroform								
1,2-Dichloroethane							13	
2-Butanone								
1,1,1-Trichloroethane	260	240						
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene			14					
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-pentanone								
2-Hexanone								
Tetrachloroethene	97 J	90 J	4 J					
1,1,2,2-Tetrachloroethane								
Toluene	230000 *	240000 *	7	10				
Chlorobenzene	150 J	140 J	830 *	12				
Ethylbenzene	1200	1200		4 J				
Styrene								
Xylene (Total)	4000	3800		20				

A blank space indicates the compound was not detected.
J Quantitation is approximate due to limitations identified during the quality control review.
R Value is rejected.
* Value reported from diluted analysis.

CLP VOLATILE ORGANIC ANALYSIS

CASE NO. 16259 SDG NO. AZ328

SAMPLE QUANTITATION LIMITS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328	AZ329	AZ330	AZ331	AZ332	AZ333	AZ334	
Remarks	50X Dil.	Dup. AZ328 50X Dil.				Rinsate	Trip Blank	
VOLATILE ORGANIC COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
Chloromethane	500	500	10	10	10	10	10	
Bromomethane	500	500	10	10	10	10	10	
Vinyl Chloride	500	500	10	10	10	10	10	
Chloroethane	500	500	10	10	10	10	10	
Methylene Chloride	250	250	5	5	5	5	5	
Acetone	1000 U	970 U	23 U	60 U	16 U	10	10	
Carbon Disulfide	250	250	5	5	5	5	5	
1,1-Dichloroethene	250	250	5	5	5	5	5	
1,1-Dichloroethane	250	250	5	5	5	5	5	
1,2-Dichloroethene (Total)	250	250	5	5	5	5	5	
Chloroform	250	250	5	5	5	5	5	
1,2-Dichloroethane	250	250	5	5	5	5	5	
2-Butanone	500 R	500 R	10 R	10	10 R	10 R	10 R	
1,1,1-Trichloroethane	250	250	5	5	5	5	5	
Carbon Tetrachloride	250	250	5	5	5	5	5	
Vinyl Acetate	500	500	10	10	10	10	10	
Bromodichloromethane	250	250	5	5	5	5	5	
1,2-Dichloropropane	250	250	5	5	5	5	5	
cis-1,3-Dichloropropene	250	250	5	5	5	5	5	
Trichloroethene	250	250	5	5	5	5	5	
Dibromochloromethane	250	250	5	5	5	5	5	
1,1,2-Trichloroethane	250	250	5	5	5	5	5	
Benzene	250	250	5	5	5	5	5	
trans-1,3-Dichloropropene	250	250	5	5	5	5	5	
Bromoform	250	250	5	5	5	5	5	
4-Methyl-2-pentanone	500	500	10	10	10	10	10	
2-Hexanone	500	500	10	10	10	10	10	
Tetrachloroethene	250	250	5	5	5	5	5	
1,1,2,2-Tetrachloroethane	250	250	5	5	5	5	5	
Toluene	10000 *	10000 *	5	5	5	5	5	
Chlorobenzene	250	250	50 *	5	5	5	5	
Ethylbenzene	250	250	5	5	5	5	5	
Styrene	250	250	5	5	5	5	5	
Xylene (Total)	250	250	5	5	5	5	5	

UJ Quantitation limit is approximate due to limitations identified during the quality control review.

R Value is rejected.

* Elevated due to diluted value used.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 16259 SDG NO. AZ328
ANALYTICAL RESULTS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy		
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328	AZ329	AZ330	AZ331	AZ332	AZ333		
Remarks		Dup. AZ328				Rinsate		
Sampling Date	04/18/91	04/18/91	04/18/91	04/18/91	04/18/91	04/18/91		
Extraction Date	04/22/91	04/22/91	04/22/91	04/22/91	04/22/91	04/22/91		
Analysis Date	04/28/91	04/28/91	04/28/91	04/28/91	04/28/91	04/28/91		
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Phenol	410 *	410 *		52				
bis (2-Chloroethyl) ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Benzyl Alcohol	170 *	160 *						
1,2-Dichlorobenzene	100	97						
2-Methylphenol	480 *	470 *						
bis (2-Chloroisopropyl)ether								
4-Methylphenol	200 *	200 *		54				
N-Nitroso-di-n-propylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol	40	38						
Benzoic acid	1000 *	970 *						
bis (2-Chloroethoxy) methane								
2,4-Dichlorophenol	1400 *	1300 *		26				
1,2,4-Trichlorobenzene								
Naphthalene	13	12						
4-Chloroaniline								
Hexachlorobutadiene								
4-Chloro-3-methylphenol	26	27						
2-Methylnaphthalene								
Hexachlorocyclopentadiene								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline								
Dimethylphthalate								
Acenaphthylene								
2,6-Dinitrotoluene								

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 16259 SDG NO. AZ328
ANALYTICAL RESULTS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy		
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328	AZ329	AZ330	AZ331	AZ332	AZ333		
Remarks		Dup. AZ328				Rinsate		
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
3-Nitroaniline								
Acenaphthene								
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran								
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenylether								
Fluorene								
4-Nitroaniline								
4,6-Dinitro-2-methylphenol								
N-Nitrosodiphenylamine								
4-Bromophenyl-phenylether								
Hexachlorobenzene								
Pentachlorophenol								
Phenanthrene								
Anthracene								
Di-n-butylphthalate								
Fluoranthene								
Pyrene								
Butylbenzylphthalate								
3,3'-Dichlorobenzidine								
Benzo(a)anthracene								
Chrysene								
bis(2-Ethylhexyl)phthalate								
Di-n-octyl phthalate								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Benzo(a)pyrene								
Indeno (1,2,3-cd)pyrene								
Dibenz(a,h)anthracene								
Benzo(g,h,i)perylene								

A blank space indicates the compound was not detected.

J Quantitation is approximate due to limitations identified during the quality control review.

R Value is rejected.

* Result obtained through dilution.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 16259 SDG NO. AZ328
SAMPLE QUANTITATION LIMITS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy		
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328	AZ329	AZ330	AZ331	AZ332	AZ333		
Remarks		Dup. AZ328				Rinsate		
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
Phenol	100 *	100 *	10	10	10	10		
bis (2-Chloroethyl) ether	10	10	10	10	10	10		
2-Chlorophenol	10	10	10	10	10	10		
1,3-Dichlorobenzene	10	10	10	10	10	10		
1,4-Dichlorobenzene	10	10	10	10	10	10		
Benzyl Alcohol	100 *	100 *	10	10	10	10		
1,2-Dichlorobenzene	10	10	10	10	10	10		
2-Methylphenol	100 *	100 *	10	10	10	10		
bis (2-Chloroisopropyl)ether	10	10	10	10	10	10		
4-Methylphenol	100 *	100 *	10	10	10	10		
N-Nitroso-di-n-propylamine	10	10	10	10	10	10		
Hexachloroethane	10	10	10	10	10	10		
Nitrobenzene	10	10	10	10	10	10		
Isophorone	10	10	10	10	10	10		
2-Nitrophenol	10	10	10	10	10	10		
2,4-Dimethylphenol	10	10	10	10	10	10		
Benzoic acid	500 *	500 *	50	50	50	50		
bis (2-Chloroethoxy) methane	10	10	10	10	10	10		
2,4-Dichlorophenol	100 *	100 *	10	10	10	10		
1,2,4-Trichlorobenzene	10	10	10	10	10	10		
Naphthalene	10	10	10	10	10	10		
4-Chloroaniline	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ		
Hexachlorobutadiene	10	10	10	10	10	10		
4-Chloro-3-methylphenol	10	10	10	10	10	10		
2-Methylnaphthalene	10	10	10	10	10	10		
Hexachlorocyclopentadiene	10	10	10	10	10	10		
2,4,6-Trichlorophenol	10	10	10	10	10	10		
2,4,5-Trichlorophenol	50	50	50	50	50	50		
2-Chloronaphthalene	10	10	10	10	10	10		
2-Nitroaniline	50	50	50	50	50	50		
Dimethylphthalate	10	10	10	10	10	10		
Acenaphthylene	10	10	10	10	10	10		
2,6-Dinitrotoluene	10	10	10	10	10	10		

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 16259 SDG NO. AZ328
SAMPLE QUANTITATION LIMITS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy		
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328	AZ329	AZ330	AZ331	AZ332	AZ333		
Remarks		Dup. AZ328				Rinsate		
SEMI-VOLATILE COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
3-Nitroaniline	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ		
Acenaphthene	10	10	10	10	10	10		
2,4-Dinitrophenol	50	50	50	50	50	50		
4-Nitrophenol	50	50	50	50	50	50		
Dibenzofuran	10	10	10	10	10	10		
2,4-Dinitrotoluene	10	10	10	10	10	10		
Diethylphthalate	10	10	10	10	10	10		
4-Chlorophenyl-phenylether	10	10	10	10	10	10		
Fluorene	10	10	10	10	10	10		
4-Nitroaniline	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ		
4,6-Dinitro-2-methylphenol	50	50	50	50	50	50		
N-Nitrosodiphenylamine	10	10	10	10	10	10		
4-Bromophenyl-phenylether	10	10	10	10	10	10		
Hexachlorobenzene	10	10	10	10	10	10		
Pentachlorophenol	50	50	50	50	50	50		
Phenanthrene	10	10	10	10	10	10		
Anthracene	10	10	10	10	10	10		
Di-n-butylphthalate	10	10	10	10	10	10		
Fluoranthene	10	10	10	10	10	10		
Pyrene	10	10	10	10	10	10		
Butylbenzylphthalate	10	10	10	10	10	10		
3,3'-Dichlorobenzidine	20	20	20	20	20	20		
Benzo(a)anthracene	10	10	10	10	10	10		
Chrysene	10	10	10	10	10	10		
bis(2-Ethylhexyl)phthalate	10 U	10	10	10	10	10		
Di-n-octyl phthalate	10	10	10	10	10	10		
Benzo(b)fluoranthene	10	10	10	10	10	10		
Benzo(k)fluoranthene	10	10	10	10	10	10		
Benzo(a)pyrene	10	10	10	10	10	10		
Indeno (1,2,3-cd)pyrene	10	10	10	10	10	10		
Dibenz(a,h)anthracene	10	10	10	10	10	10		
Benzo(g,h,i)perylene	10	10	10	10	10	10		

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.
* Elevated due to diluted value used.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 16259 SDG NO. AZ328
ANALYTICAL RESULTS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy		
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328DL	AZ329DL	AZ330	AZ331	AZ332	AZ333		
Remarks	100X Dil.	Dup. AZ328 100X Dil.				Rinsate		
Sampling Date	04/18/91	04/18/91	04/18/91	04/18/91	04/18/91	04/18/91		
Extraction Date	04/22/91	04/22/91	04/22/91	04/22/91	04/22/91	04/22/91		
Analysis Date	05/01/91	05/02/91	04/28/91	04/28/91	04/29/91	04/30/91		
PESTICIDE/PCB COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC (Lindane)								
Heptachlor								
Aldrin			0.071 J	0.28 J				
Heptachlor epoxide			0.053	1.4				
Endosulfan I								
Dieldrin								
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD				0.32 J				
Endosulfan sulfate								
4,4'-DDT								
Methoxychlor			6.3	0.73 J				
Endrin ketone			0.14					
alpha-Chlordane								
gamma-Chlordane								
Toxaphene								
Aroclor-1016								
Aroclor-1221								
Aroclor-1232								
Aroclor-1242								
Aroclor-1248								
Aroclor-1254								
Aroclor-1260								

A blank space indicates the compound was not detected.
J Quantitation is approximate due to limitations identified during the quality control review.
R Value is rejected.

CLP EXTRACTABLE ORGANIC ANALYSIS
CASE NO. 16259 SDG NO. AZ328
SAMPLE QUANTITATION LIMITS

Sample Location	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy	Ciba Geigy		
Sample Number	MW14S	MW14S	MW11S	MW15S	MW18S			
Traffic Report Number	AZ328DL	AZ329DL	AZ330	AZ331	AZ332	AZ333		
Remarks	100X Dil.	Dup. AZ328 100X Dil.				Rinsate		
PESTICIDE/PCB COMPOUND	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
alpha-BHC	5.0	5.0	0.050	0.050	0.050	0.050		
beta-BHC	5.0	5.0	0.050	0.050	0.050	0.050		
delta-BHC	5.0	5.0	0.050	0.050	0.050	0.050		
gamma-BHC (Lindane)	5.0	5.0	0.050	0.050	0.050	0.050		
Heptachlor	5.0	5.0	0.050	0.050	0.050	0.050		
Aldrin	5.0	5.0	0.050	0.050	0.050	0.050		
Heptachlor epoxide	5.0	5.0	0.050	0.050	0.050	0.050		
Endosulfan I	5.0	5.0	0.050	5.0 *	0.050	0.050		
Dieldrin	10	10	0.10	10 *	0.10	0.10		
4,4'-DDE	10	10	0.10	10 *	0.10	0.10		
Endrin	10	10	0.10	0.10	0.10	0.10		
Endosulfan II	10	10	0.10	0.10	0.10	0.10		
4,4'-DDD	10	10	0.10	0.10	0.10	0.10		
Endosulfan sulfate	10	10	0.10	0.10	0.10	0.10		
4,4'-DDT	10	10	0.10	0.10	0.10	0.10		
Methoxychlor	50	50	0.50	0.50	0.50	0.50		
Endrin ketone	10	10	0.10	0.10	0.10	0.10		
alpha-Chlordane	50	50	0.50	50 *	0.50	0.50		
gamma-Chlordane	50	50	0.50	50 *	0.50	0.50		
Toxaphene	100	100	1.0	1.0	1.0	1.0		
Aroclor-1016	50	50	0.50	0.50	0.50	0.50		
Aroclor-1221	50	50	0.50	0.50	0.50	0.50		
Aroclor-1232	50	50	0.50	0.50	0.50	0.50		
Aroclor-1242	50	50	0.50	0.50	0.50	0.50		
Aroclor-1248	50	50	0.50	0.50	0.50	0.50		
Aroclor-1254	100	100	1.0	1.0	1.0	1.0		
Aroclor-1260	100	100	1.0	1.0	1.0	1.0		

UJ Quantitation limit is approximate due to limitations identified during the quality control review.
R Value is rejected.
* Results reported from the dilution.